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## Public Health in Colonial and Post-Colonial Ghana: Lesson-Drawing for the Twenty-First Century

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### Abstract

*Public health in twenty-first century Ghana is mired with several issues ranging from the inadequacy of public health facilities, improper settlement planning, insanitary conditions, and the inadequacy of laws and their implementation. This situation compared to the colonial era is a direct contradiction. Development in the pre-colonial era to the colonial era sought to make the prevention of diseases a priority in the colonial administration. This was begun with the establishment of the health branch in 1909 as a response to the bubonic plague that was fast spreading in the colony. From here public health policies and strategies were enacted to help the diseases prevention cause. Various public health boards, the medical research institute or the laboratory branch, the waste management department, the use of preventive medicine and maintenance of good settlement planning and sanitation were public health measures in the colonial era. This research seeks to analyse the public health system in the colonial era so as to draw basic lessons for twenty-first century Ghana. Archival data and other secondary sources are reviewed and analysed to help draw these lessons. Richard Rose's lesson-drawing approach was used to draw the lessons.*

*Keywords: Public Health; Environment; Sanitation; Lesson-Drawing.*

## Introduction

In the history of medicine, the ancient Romans were known to have played a major role when it comes to public health. They were of the view that “a healthy body ensures a healthy mind”.<sup>1</sup> People were advised by their rulers to build their homes in healthy areas away from swamps, drains and marshes to prevent diseases such as malaria. Clean water was also provided through conduits and aqueducts. Low priced public toilets and baths were provided to ensure cleanliness and health since they believed that bathing was a means to prevent diseases.<sup>2</sup> A look at the public health situation in other countries like Britain, America and other African countries including Ghana shows that same practices have been used and have proven useful overtime.<sup>3</sup>

Before the colonial era, health and public health in particular was controlled by traditional rulers. These traditional rulers introduced measures such as communal labour, taboos and other rules and regulations that helped to ensure cleanliness and prevent diseases. Medicine at the time was controlled by traditional healers or rulers who used herbs and other traditional means such as the wearing of amulets to cure and prevent diseases.<sup>4</sup> In the mid-nineteenth century Europeans realised that their health could no longer be guaranteed, even if they isolated themselves from the local people. They realised that unless the health needs of the local population were met, their plans for a healthy living would also not be met.<sup>5</sup> Kunfaa was of the view that British rule brought about modern or western health systems in the country. The health system in the country at the time of British rule was said to focus on hospital based clinical care, which was initially to serve the expatriate civil servants and merchants. Most health facilities were concentrated in port towns and areas with commercial activities with a focus on sanitation activities in towns and cities.<sup>6</sup>

Senah argues that the colonial medical service during this time was largely curative. The provision of health services was urban biased and fees were charged for the delivery of health care. With this, even at the height of the colonial medical service, not more than ten percent of the population had access to allopathic care.<sup>7</sup> Thus, before the establishment of the sanitary branch which ensured that there was clean environment and ensured the prevention of diseases related to the environment and filth, curative medicine which was urban-biased and expensive, rather than preventive medicine or public health, was the order of the day. Attention was paid to the use of public health measures or preventive medicine only after the establishment of the sanitary branch. This paved the way to continue the building of hospitals and other public health facilities in Asante. As had been started in Cape Coast with a hospital in 1868 and several rural dispensaries, the Korle Bu hospital was built in 1923. Other public health measures such as the provision of piped water, drainage systems and the provision of

<sup>1</sup> Kate Kelly, *History of Medicine, Early Civilizations: Prehistoric Times To 500 C.E.*, (Infobase Publications, 2009), 148-149.

<sup>2</sup> Plinio Prioreschi, *A History of Medicine: Roman Medicine*, (Horatius Press, 1996), 360.

<sup>3</sup> Lord Amulree, “Hygienic Conditions in Ancient Rome and Modern London”, *Medical History*, Vol.17:3 (1973): 246-248. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1081473/pdf/medhist00122-0039.pdf>

<sup>4</sup> Edward Brenya and Samuel Adu-Gyamfi, “Interest Groups, Issue Definition and the Politics of Healthcare in Ghana”, *Public Policy and Administration Research*, Vol.4, No.6 (2014), 89

<sup>5</sup> Charles M Good, “Pioneer Medical Missions in Colonial Africa”, *Social Science and Medicine*, Volume 32, Issue 1 (1991), 1-10. [https://doi.org/10.1016/0277-9536\(91\)90120-2](https://doi.org/10.1016/0277-9536(91)90120-2)

<sup>6</sup> EY Kunfaa, “Sustainable Rural Health Services through Community-Based Organisations” *Spring Research Series*, (1996), 25, 54.

[http://www.raumplanung.tu-dortmund.de/rel/typo3/fileadmin/download/spring\\_publications/SRS%2016.pdf](http://www.raumplanung.tu-dortmund.de/rel/typo3/fileadmin/download/spring_publications/SRS%2016.pdf)

<sup>7</sup> Kojo Senah, “In Sickness and In Health: Globalization and Health Care Delivery in Ghana”, *Institute of African Studies Research Review*, (2001), 84. <http://hdl.handle.net/10520/EJC45911>

sanitary facilities were taken from this time on not only to protect the Europeans but the entire Gold Coast colony as a whole after the annexation of Asante, the northern territories and the acquisition of trans Volta Togoland. European administrators and the local authorities (chiefs) played various roles in the provision of public health services to prevent diseases.<sup>8</sup>

Malnutrition and poor sanitation were the main causes of diseases such as yaws, malaria, and fever in pre-colonial Ghana.<sup>9</sup> Adu-Gyamfi cites Stephen Addae's assertion that a shortfall in public health and the inadequate provision of public health services was a major cause of diseases before 1880. This was because of the insanitary conditions in the Gold Coast especially along the coast. Bushes and beaches were used as places of convenience; there was improper disposal of waste at the beaches and in the open environment.<sup>10</sup> Contact with the Europeans and colonialism brought about various public health measures. Preventive health care methods were introduced by the Europeans. Preventive health care has been defined as "a pattern of nursing and medical care that focuses on disease prevention and health maintenance. It includes early diagnosis of disease, discovery and identification of people at risk of development of specific problems counselling, and other necessary intervention to avert a health problem. Screening, testing, health education and immunisation programmes are common examples of preventive care".<sup>11</sup> These methods would not only help prevent diseases but also ensure a healthy nation for the advancement of the social and economic status of the people.

According to the World Health Organisation (WHO), "public health refers to all organised measures (whether public or private) to prevent diseases, promote health and prolong life among the population as a whole".<sup>12</sup> Public health has many dimensions; for example, the assessment and monitoring of the health of communities and populations, the identification of health problems and priorities, and the formulation of policies to address health problems. Other focuses include ensuring that all populations have access to appropriate and cost effective health care as well as the advancement of health by establishing disease prevention services.<sup>13</sup> Public health can also be defined as; "the science and practice of protecting and improving the health of a community, as by preventive medicine, health education, control of communicable diseases, application of sanitary measures, and monitoring of environmental hazards".<sup>14</sup> Public health as defined by the UK Faculty of Public Health Medicine is, "the science and art of promoting and protecting health and well-being, preventing ill-health and prolonging life through the organised efforts of society".<sup>15</sup>

The colonial administration put measures such as health education, immunisation, and provision of health facilities, screening test, provision of incinerators, and other measures to

<sup>8</sup> Kojo Senah, "In Sickness and In Health: Globalization and Health Care Delivery in Ghana", *Institute of African Studies Research Review*, (2001), 83-85, <http://hdl.handle.net/10520/EJC45911>

<sup>9</sup> Patrick A. Twumasi, "A Social History of the Ghanaian Pluralistic Medical System", *Social Science and Medicine*, Vol.13, Issue 4 (1979), 349-356, [https://doi.org/10.1016/0160-7987\(79\)90030-9](https://doi.org/10.1016/0160-7987(79)90030-9)

<sup>10</sup> Samuel Adu-Gyamfi, Prince Osei-Wusu Adjei, Daniel Owusu-Ansah, "Preventive Healthcare Strategies and Impact among the Asante People of the Early Twentieth Century Gold Coast: A Historical Narrative and Lessons for the Present Sanitation Challenge in Kumase", *Journal of Studies in Social Sciences*, Vol. 5 (2013), 214-215, <http://infinitypress.info/index.php/jsss/article/view/412/221>

<sup>11</sup> Ibid.

<sup>12</sup> World Health Organization, Glossary of Globalization, Trade and Health Terms, <http://www.who.int/trade/glossary/story076/en/>.

<sup>13</sup> Ibid.

<sup>14</sup> The American Heritage Dictionary of the English Language, *Houghton Mifflin Harcourt Publishing Company*, 5th edition (2013).

<sup>15</sup> UK Faculty of Public Health, <http://www.fph.org.uk/>.

protect not only the Europeans but the colony as a whole. The local authority also played several roles concerning public health in colonial Ghana. Chiefs provided avenues for health education, and also made and enforced laws to sure public health. Thus, communal labour and sanctions for not maintaining a clean and healthy environment were means local authorities used to ensure public health. The indigenes also cooperated with local authority and colonial administrators to provide a healthy environment free from diseases.<sup>16</sup>

The central question for this paper is to study Ghana's colonial public health system and to draw lessons for the twenty-first century public health system. It highlights the benefits and problems of the public health system in colonial Ghana and also ascertains whether these benefits and problems are recurrent in twenty-first century Ghana. Richard Rose's "What is Lesson-Drawing?" provides a very clear approach and procedure that helps to draw various lessons for twenty-first century Ghana. "Lesson-drawing addresses the question: under what circumstances and to what extent can a programme that is effective in one place transfer to another?"<sup>17</sup> Thus this study also assesses the effectiveness of the public health system in colonial Ghana and provides measures by which this effectiveness can be transferred to twenty-first century Ghana. Richard Rose also opines that "to understand where we are at present, we must have the bearing in time and space. Programmes are judged in relation to past performance, and the anticipation of their future consequences".<sup>18</sup> Using this method, the public health issue in contemporary Ghana can only be analysed with the consideration of "time and space" by revisiting and making deductions from the past. Lesson-drawing uses knowledge acquired through time to the benefit of current programmes. To this end, the assessment of the public health system in colonial Ghana would provide concrete evidence to help draw lessons for twenty-first century Ghana.

Measures such as the establishment of various public health boards, dispensaries, hospitals, vaccinations and the use of rules and other means of providing public health services were measures used in colonial Ghana to ensure the prevention of outbreaks of diseases.<sup>19</sup> The inadequate provision of public health services has led to several epidemics and disease outbreaks such as malaria, cholera, symptoms of diarrhoea, and several other air and waterborne diseases which in the long run affect the socio-economic development of the nation.

## Method of Study

Qualitative research design is at the centre of this research. Several data collection approaches have been employed to obtain information for this research. Both primary and secondary sources have been used to ensure in-depth findings concerning the subject matter. Information or data from Public Records and Archives Administration (PRAAD), Kumasi,

<sup>16</sup> Samuel Adu-Gyamfi, "A Historical Study of the Impact of Colonial Rule on Indigenous Medical Practices in Ashanti: A Focus on Colonial and Indigenous Disease Combat and Prevention Strategies in Kumasi, 1902-1957", A Thesis Submitted to the Department of History and Political Studies, Kwame Nkrumah University Of Science And Technology, Kumasi in Partial Fulfilment of the Requirement for the Award of the Degree of Doctor of Philosophy, Historical Studies, 2010, 44.

<sup>17</sup> Richard Rose, "What is Lesson-Drawing?", *Journal of Public Policy*, Vol.11 (1991), 3-30. <https://doi.org/10.1017/S0143814X00004906>

<sup>18</sup> Ibid,4.

<sup>19</sup> Samuel Adu-Gyamfi, Prince Osei-Wusu Adjei, Daniel Owusu-Ansah, "Preventive Healthcare Strategies and Impact among the Asante People of the Early Twentieth Century Gold Coast: A Historical Narrative and Lessons for the Present Sanitation Challenge in Kumase", *Journal of Studies in Social Sciences*, Vol. 5 (2013), 218-220, <http://infinitypress.info/index.php/jsss/article/view/412/221>

provided a great source of primary data. PRAAD was chosen because it is stocked with primary data concerning the research topic. Primary data on European health establishments and agencies in the colonial period was a core source for this study. Information from the archives also provided basic and authentic data about the issues of public health in the colonial days. Primary data on the basic sanitation laws of 1883 and 1902 was of great importance to this research. PRAAD also provided data on the use of preventive medicine in the colonial era giving in-depth analysis on the quantity and quality of quinine distributed in the colonial era. Information on the provision of public health facilities such as incinerators, latrines, drainage systems, and others were also obtained at PRAAD Kumasi.

Some additional information concerning the subject matter was retrieved from books and articles by various authors. These sources also brought to the fore the general colonial systems and the political, social and economic challenges and how they affected the public health system. Data from government agencies such as the Ministry of Health (public health division) and the Environmental Protection Agency of Ghana also provided information for this research. These agencies provided not only qualitative but some statistical data and analysis of the public health system in colonial Ghana. Current information from these agencies and institutions helped to establish the current nature of public health service and provided a means for comparative analysis in order to draw concrete lessons for twenty-first century Ghana. Findings from all of these sources were examined to provide accurate analysis for the research.

## Pre-Colonial and Colonial General Health System in Ghana

Healthcare in the pre-colonial era considered diseases as a hindrance to economic growth so the traditional healers and the indigenes sought means to deal with diseases and to stay healthy in order to improve their socio-economic status.<sup>20</sup> Prior to European advent, traditional healers provided healthcare to the indigenes.<sup>21</sup> They created various groups and associations. In Asante for instance, they formed a group which was led by the *Nsumankwahene*.<sup>22</sup> In the Pre-colonial Era, diseases were also believed to be a form of punishment from ancestors and deities. The punishment was considered to be a result of some misdemeanour. Disease demons and other spirits were also believed to be the cause of some sicknesses.<sup>23</sup> Curative means involved the use of exorcisms, spells, herbs, barks of trees, concoctions and sometimes the wearing of amulets. Individuals or close relatives paid for one's healthcare, with fowl, sheep, goats and other animals acting as payments for healing. The payment depended on what the gods had requested through the priest or priestess.<sup>24</sup>

With the arrival of the Europeans, healthcare in Ghana took a different turn. The colonial administration took charge of healthcare and its issues in Ghana. Environmental and biological issues were what the colonial administration saw as the cause of diseases as opposed to the spiritual cause described by the traditional healers. Arhinful observes that health and medicine in the pre-colonial era was administered by traditional healers. The few whites in the country at the time saw some of the modes of treatment as barbaric and

<sup>20</sup> Edward Brenya and Samuel Adu-Gyamfi, "Interest Groups, Issue Definition and the Politics of Healthcare in Ghana", *Public Policy and Administration Research*, Vol.4, No.6 (2014), 89.

<http://www.iiste.org/Journals/index.php/PPAR/article/view/13673/13989>

<sup>21</sup> Ibid.

<sup>22</sup> Ibid.

<sup>23</sup> Ibid.

<sup>24</sup> Ibid.



backward.<sup>25</sup> He states that a colonial medical service was finally created in the last quarter of the nineteenth century, when Britain became the sole colonial power in the Gold Coast. Arhinful explains that the colonial health service was established as a means to control the high rate of deaths among the Europeans in the country. As population increased in the colony, it became a concern for the Europeans to channel the resources of the colony into securing their health. The result of this was the establishment of a civil medical infrastructure, virtually from scratch, in the colony from 1890.<sup>26</sup>

Senah also states that the history of biomedicine in Ghana can be traced to the relations the country had with the Europeans. He argues that colonial health service developed in the Gold Coast in three phases: “The first phase (1471–1844) was characterised by medical apartheid whereby white settlers were physically segregated from the local population and given medical coverage”.<sup>27</sup> The local people - especially civil servants and the military - began to benefit from the European medical services. Sanitary facilities and hospitals were built in areas mostly with sizeable white settlers. The Cape Coast hospital was built in 1868. Other rural dispensaries were built in the rural areas. The local people however, did not patronize these ‘European medical services’ but still looked to traditional medicine for treatment. This led to the passing of the Native Customs Regulation Ordinance in 1878 which banned traditional healing. “African civil servants were compelled to obtain a certificate of disability from colonial medical officers only. Christian converts were threatened with ex-communication if found to have consulted traditional healers”.<sup>28</sup> After the defeat of Asante and the annexation of the northern territories, medical infrastructure such as the Korle Bu hospital built in 1923 marked the final phase of biomedicine in colonial Ghana.<sup>29</sup>

Patterson points out the fact that curative and preventive medicine introduced into the Gold Coast played a very important role in the health of the Gold Coast. <sup>30</sup> Even though the local people did not easily accept the introduction of western medicine, it was gradually not only of benefit to the Europeans in Ghana but also to the indigenes. Patterson also states that colonial health services, including public health services, had their rudiments in the establishment of the Gold Coast medical department in the 1880’s administered by the principal medical officer who was a physician<sup>31</sup>.

A sanitary branch was created in the health service in 1909. This branch was to oversee sanitation, vaccination and other preventive health care measures which ensured diseases were prevented in the colony. From 1923 to 1934, health needs in the colony were under the Director of Medical and Sanitary Services, with increasing attention being paid to sanitation and public health.<sup>32</sup> The health and sanitary branch were established as a result of the bubonic plague epidemic. “The health branch was responsible for a number of unglamorous tasks, such as nuisance abatement, cleaning of drains, latrines, and dustbins,

<sup>25</sup> Daniel Kojo Arhinful, “The Solidarity of Self-Interest: Social and Cultural of Rural Health Insurance in Ghana”, *African Studies Centre Research Report*, (2003).71 <https://openaccess.leidenuniv.nl/bitstream/handle/1887/12919/ASC-075287668-077-01.pdf?sequence=2>

<sup>26</sup> Ibid.

<sup>27</sup> Kojo Senah, “In Sickness and in Health: Globalization and Health Care Delivery in Ghana”, *Institute of African Studies Research Review*, (2001), 83. <http://hdl.handle.net/10520/EJC45911>

<sup>28</sup> Ibid., 84.

<sup>29</sup> Ibid.

<sup>30</sup> K. D Patterson, *Health in Colonial Ghana: Disease, Medicine, and Socio-Economic Change, 1900-1955*, (Crossroads Press, 1986), 27.

<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

inspecting houses, markets, slaughter houses, and restaurants, vaccination, and most vexatious of all, mosquito control”<sup>33</sup>. This branch was responsible for public health measures in the Gold Coast. Inspectors were appointed to go around from time to time inspecting various places which were prone to diseases. The health branch practiced social medicine; its aim was not to use curative means to heal diseases but to use preventive means to make sure that diseases and epidemics did not occur in the first place<sup>34</sup>. They were to see to it that homes, markets and all public places were neat, that people ate decent food, that there was good planning of buildings, and that healthy living was assured. People who were found doing otherwise were punished or fined.

“Broad improvements in water supply, sewage disposal, housing, vector control, diet, and specific immunization were essential”<sup>35</sup>. Public health in the colonial era also was geared towards improving or developing the Gold Coast water supply system to ensure the provision of good drinking water and water for domestic and other uses. This was to ensure that water borne diseases did not spread. The disposal of sewage was also managed to keep a clean environment free from diseases<sup>36</sup>. All of these measures were essential in the colonial era and were undertaken by the colonial administration with the help of the local administration.

To prevent diseases from occurring, health education, screening tests and immunization were employed. Prior to 1910, European mortality at the Gold Coast was on the increase. This was largely as a result of insanitary conditions such as open defecation, improper waste disposal and stagnant water which bred mosquitoes. These caused diseases, for example, worm infestation, malaria, yellow fever, yaws and sleeping sickness. These diseases affected not only the Europeans but the indigenes as well. In the bid to curtail the rising mortality rate, preventive health care with the use of several public health measures were used.<sup>37</sup> The use of strategies to prevent rather than cure diseases was only resorted to when plagues and communicable diseases were spreading and became difficult to control in Ghana. They triggered the use of public health strategies.<sup>38</sup> Gundona argues that during the colonial era, it was an already established fact in Europe that the best way to ensure public health was to pay more attention to sanitation and preventive health. But the contrast was seen in most British colonies; the British medical systems in their colonies did not show much interest in the use of preventive health.<sup>39</sup>

The preventive health measures were mostly used in the coastal areas and areas with heavy European population. The sanitary conditions in the Ghanaian communities were still detrimental to health in colonial Ghana.<sup>40</sup> Gundona argues that the budget to oversee sanitation was so huge but funding so small that the health authorities in the colony thought it was expedient to limit sanitary activities to purely European settlements in the Gold Coast. Evidence from other medical scholars points out that this measure was seen as expedient because the colonial administration was of the view that the indigenes were so ingrained in a culture of filth and insanitary habits and that it would be a waste of time and resources in

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.

<sup>35</sup> Ibid

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Sylvester Gundona, “Coping with this Scourge”: The State, Leprosy, and the Politics of Public Health in Colonial Ghana, 1900- mid 1950s”, A Dissertation Presented to the Faculty of the Graduate School of the University of Texas at Austin in Partial Fulfilment of the Requirements for the Degree of Doctor of Philosophy The University of Texas at Austin, May 2015.33-34.

<sup>40</sup> Ibid., 34-35.



pursuing any sanitation measures within strictly African settlements.<sup>41</sup> Due to the limited amount of money available to fund the basic public health policies, they thought it wise to use preventive health care and sanitary activities in areas with large or solely European settlement.<sup>42</sup> Richard Crook and Joseph Ayee also describe the public health situation in colonial Ghana.<sup>43</sup> With Kumasi and Accra as their major study cities, Crook and Aryee point out that both cities faced major public health problems: sanitation, inadequate water supply and improper waste disposal.<sup>44</sup>

Patterson describes out various public health policies or plans that were advocated and implemented in colonial Ghana. One of these was the establishment of the health sector plan proposed by Doctor J. Balfour Kirk in 1943.<sup>45</sup> A network of rural dispensaries around a hospital was proposed by Kirk. In each of these centres a sanitary inspector, nurse, dispenser and an optional midwife if available were to be present to take care of both preventive and curative healthcare needs.<sup>46</sup> The appointment of a sanitary inspector in the health care plan was a major boost for the public health care system in colonial Ghana. The sanitary inspector and other personnel had the duty of educating the public on how some common diseases in the Gold Coast are caused and can be prevented. They went around the villages to ensure sanitation and they issued summons for breaches.<sup>47</sup>

In his report on environmental health, sanitation and hygiene strategies and practices, Boye Bandie brings to the fore another establishment that encouraged public health in colonial Ghana. The Environmental Health Department was created within the public health service during the colonial era.<sup>48</sup> The first public health law in Ghana was passed in 1878. This law was known as the Towns Police and the Public Health Ordinance.<sup>49</sup> The Mosquito Ordinance, Cap 75 in 1891, Cap 78, 84 and 86 between 1911 and 1945, reinforced the observance of environmental sanitation in all towns, urban and local councils in the country.<sup>50</sup> These laws were devised to help prevent diseases in colonial Ghana. Cap 75 also known as the Mosquito Ordinance gave the Environmental Health Department the power to take the required procedure to destroy mosquito larvae, Cap 86 was to take care of the general sanitation problems while Cap 78 was concerned with infectious diseases and how to prevent them.<sup>51</sup> The functions, roles and responsibilities of this department continued to change from time to time. An example of this is the change of name of its staff from inspector of nuisances to sanitary inspector to health inspector. Even though the names

<sup>41</sup> Ibid.

<sup>42</sup> Ibid., 35.

<sup>43</sup> Richard Crook and Joseph Ayee, "Urban Service Partnerships, 'Street-Level Bureaucrats' and Environmental Sanitation in Kumasi and Accra, Ghana: Coping with Organisational Change in the Public Bureaucracy", *Development Policy Review*, Vol. 24, No. 1, (2006), 56, DOI: [10.1111/j.1467-7679.2006.00313.x](https://doi.org/10.1111/j.1467-7679.2006.00313.x)

<sup>44</sup> Ibid.

<sup>45</sup> K. D Patterson, *Health in Colonial Ghana: Disease, Medicine, and Socio-Economic Change, 1900-1955*, (Crossroads Press, 1986), 27-28.

<sup>46</sup> Ibid.

<sup>47</sup> Ibid.

<sup>48</sup> Boye Bandie, "Assessment of the Environmental Health, Sanitation and Hygiene Strategies and Practices", *Final Report on District Capacity Building Project*, (Bolgatanga, March 2003).3-6

<sup>49</sup> Samuel Adu-Gyamfi, Prince Osei-Wusu Adjei, Daniel Owusu-Ansah, "Preventive Healthcare Strategies and Impact among the Asante People of the Early Twentieth Century Gold Coast: A Historical Narrative and Lessons for the Present Sanitation Challenge in Kumase", *Journal of Studies in Social Sciences*, Vol 5 (2013), 218, <http://infinitypress.info/index.php/jsss/article/view/412/221>

<sup>50</sup> Ibid., 221.

<sup>51</sup> Ibid.

changed the functions remained the same.<sup>52</sup> In his report, Bandie also points out that due to urbanisation and a growth in population, waste generation also increased. These issues led to the creation of waste management departments in cities like Tema, Accra, Kumasi and Sekondi-Takoradi. This was done in order for the Waste Management Department to help combat the issue of wastes which was becoming a burden for the Environmental Department.<sup>53</sup>

A law was enacted to ensure that buildings were erected only with permission from government and old buildings were either repaired or destroyed. The colonial surveyor was appointed to clear and drain the streets. Fines were also imposed on people who caused public nuisance.<sup>54</sup> The creation of the sanitary branch as a result of the bubonic plague was one of the major public health policies.

Another major public health policy in colonial Ghana was evident in Kumasi: the establishment of the Kumasi Public Health Board (KPHB).<sup>55</sup> The office of the town clerk was created under this board. This office was responsible for the sanitary and health condition of the Asante. There was a hierarchy of officers created under the KPHB; European town inspectors to supervise sanitary inspectors, government sanitary inspectors (second division sanitary overseers), first division sanitary inspectors who had the duty of ensuring good sanitation in the municipalities, this division also supervised divisional sanitary overseers who were responsible for the towns, at the bottom of the hierarchy were the latrine and incinerator and dustbin gangs and the street sweepers responsible for cleaning latrines, maintenance of incinerators, collection of refuse and sweeping the street.<sup>56</sup> All these measures helped to maintain public health in Kumasi.

The anti-mosquito brigade was also a creation of the colonial administration to foresee public health. The Mosquito Ordinance of 1911 enhanced the activities of the brigade. “Among its provisions; private domestic dwellings in certain designated towns had to submit to authorized entry, Larval and general sanitary inspection by sanitary inspectors between 6am and 6pm any day. Offenders were prosecuted with a fine of up to five pounds inflicted”.<sup>57</sup>

The creation of the town works section also made possible the maintenance of town offices, pumps, wells and chlorination plants. It further ensured maintenance of plants, tools and tree planting and took responsibility for the maintenance of sanitary structures, bungalows, and new zongos, market and slaughter houses”.<sup>58</sup> The bubonic plague, cholera, yellow fever, smallpox and typhus were some of the major diseases in colonial Ghana. These diseases were on the increase and therefore called for serious public health preventative measures. The issue of sanitation was not the only concrete measure to prevent these diseases.<sup>59</sup> The efforts made by colonial authorities to make sure diseases were prevented in

<sup>52</sup> Boye Bandie, “Assessment of the Environmental Health, Sanitation and Hygiene Strategies and Practices”, *Final Report on District Capacity Building Project*, (Bolgatanga, March 2003).3-6

<sup>53</sup> Ibid., 3-6

<sup>54</sup> Ibid.

<sup>55</sup> Samuel Adu-Gyamfi, Prince Osei-Wusu Adjei, Daniel Owusu-Ansah, “Preventive Healthcare Strategies and Impact among the Asante People of the Early Twentieth Century Gold Coast: A Historical Narrative and Lessons for the Present Sanitation Challenge in Kumasi”, *Journal of Studies in Social Sciences*, Vol 5 (2013), 220. <http://infinitypress.info/index.php/jsss/article/view/412/221>

<sup>56</sup> Ibid., 221.

<sup>57</sup> Ibid.

<sup>58</sup> Ibid., 225.

<sup>59</sup> Ibid.

the Gold Coast also led to the provision of some basic social amenities.<sup>60</sup> Pipe-borne water was one of the colonial government's major contributions to public health in Accra. In 1904, the construction of the Accra waterworks began at Weija (15 km west of Accra) and was completed in 1914. People had earlier depended on rainwater from rooftop storage tanks or on water from polluted wells. The introduction of pipe-borne water helped reduce the incidence of many water-borne diseases such as guinea worm, typhoid fever, and dysentery.<sup>61</sup>

Health in the colonial era was controlled by the Europeans. They believed in the natural or environmental cause of diseases as against the spiritual cause. The Europeans brought with them certain diseases with which they infected the indigenes on contact. Due to the environmental conditions in colonial Ghana, malaria was one of the major diseases that killed the Europeans. But with the discovery of quinine, the use of dichlorodiphenyltrichloroethane (DDT), and the introduction of mosquito nets, the morbidity rate among the Europeans and some Gold Coasters who benefited from these discoveries decreased.<sup>62</sup> Aside from malaria, small pox, syphilis and diarrhoea and other diseases were predominant in colonial Ghana. The use of scientific medicine was linked to the coming of the Europeans when doctors instead of traditional healers took over the health needs of the people.<sup>63</sup>

The use of preventive health care strategies in the pre-colonial period was seen as a means to enhance productivity. Strategies such as taboos, communal labour and strict sanitation and hygiene laws were used to ensure public health.<sup>64</sup> The colonial administration in partnership with the local administration (chiefs) provided various facilities to ensure public health. There were installations that ensured the prevention of diseases. Various facilities were provided in specific areas to encourage good health; incinerators, drying sheds, slaughter houses, latrines, good water supply and facilities to ensure public health were provided.<sup>65</sup> By 1927, the colonial administration had spent about £4149 on public health facilities in Ashanti including areas such as Kumasi, Wenchi, Suyani, Bekwai, Juaso, Nkawe, Ejisu, Agona, Ntonsu, Akropong, and Attabubu among other towns.<sup>66</sup>

The colonial administration used rules and public education to ensure decent sanitary conditions. The sanitary by-laws under native jurisdiction ordinance number five of 1883,<sup>67</sup> and rules with respect to the regulation of towns and villages under section twenty seven of the Ashanti administration ordinance 1902 are examples of law enactments that put sanitary rules and measures in place to ensure public health.<sup>68</sup> The sanitary by-laws under native jurisdiction ordinance number 5 of 1883 stipulated that sites for latrines and rubbish heaps and cemeteries shall not be less than hundred yards from any house or water supply. Chiefs

<sup>60</sup> Samuel Agyei-Mensah and Ama De-Graft Aikins, "Epidemiological Transition and the Double Burden of Disease in Accra, Ghana", *Journal of Urban Health*, Vol. 87, No.5 (2010), 882-884, DOI: [10.1007/s11524-010-9492-y](https://doi.org/10.1007/s11524-010-9492-y)

<sup>61</sup> Ibid., 883, 886.

<sup>62</sup> K. D Patterson, *Health in Colonial Ghana: Disease, Medicine, and Socio-Economic Change, 1900-1955*, (Crossroads Press, 1986).42-45

<sup>63</sup> Ibid.

<sup>64</sup> Samuel Adu-Gyamfi, Prince Osei-Wusu Adjei, Daniel Owusu-Ansah, "Preventive Healthcare Strategies and Impact among The Asante People Of The Early Twentieth Century Gold Coast: A Historical Narrative and Lessons for the Present Sanitation Challenge In Kumase", *Journal of Studies in Social Sciences*, Vol. 5 2013, 218. <http://infinitypress.info/index.php/jsss/article/view/412/221>

<sup>65</sup> PRAAD, Kumasi, ARG/1/14/3/8, Revised Cost of Sanitary Improvements for Ashanti 1926-27.

<sup>66</sup> Ibid.

<sup>67</sup> PRAAD, Kumasi, ARG/1/14/3/1, Sanitary Bye-Laws under Native Jurisdiction Ordinance, No. 5 of 1883.

<sup>68</sup> PRAAD, Kumasi, ARG/1/14/3/1, Rules with Respect to the Regulation of Towns and Villages under Section Twenty Seven of the Ashanti Administration Ordinance 1902.

or headmen had the responsibility of choosing sites for wells or water holes and seeing to it that they were sufficiently far from the town or village and that the ground around them are well kept and protected from surface water. In case of outbreak of infectious diseases, the patient would be isolated and houses disinfected.<sup>69</sup> The ordinance also sought to ensure good housing planning so that persons who wished to erect buildings did so only with the permission of the chief or headman. The chief or headman was to ensure that there were no less than twelve clear feet between buildings and no less than thirty feet in distance in front.<sup>70</sup> Drainage systems were also required for buildings. The chief or headman was to make sure that pigs and cattle were kept in kraals or pens outside the village or towns (fifty yards from human settlement). Any domestic animal ranging from horse, cattle, sheep, cat, dog, and swine suffering from any infectious disease was to be destroyed or the owner reported to the chief or headman. All these measures were to ensure good sanitary conditions and to ultimately prevent diseases. Any person who broke any of these laws was liable to a fine not exceeding 20 shillings.<sup>71</sup>

Colonial Ghana saw the emergence of the use of preventive medicine as a public health measure. Thus, medicines were taken in order to prevent diseases. Typical examples were the use of vaccinations, mepacrine and quinine.<sup>72</sup> Malaria was a major killer disease in colonial Ghana. Morbidity rate increased especially with the Europeans mostly in the coastal areas. European traders, missionaries and the army suffered great losses as a result of malaria. Quinine, which was discovered in the seventeenth century, became a preventive medicine for malaria in the colonial days.<sup>73</sup> In 1935 the medical department put in place a quinine distribution scheme where the medicine was to be received at the Takoradi general post office and distributed to all post offices across the colony. It was also to be obtained in hospitals and dispensaries. Quinine came in the form of powder and tablets. The unit for sale was a tube of sixteen quinine hydrochloride tablets of fourteen grains each.<sup>74</sup> The label on the tube was “QUININE” and the tube was priced at 6 shillings. The lettering on the tube was bold with red ink on a yellow paper. The instructions on the tube were in six languages (English, Ga, Fanti, Ewe, Hausa and Twi). The drug was distributed across the colony and this helped to prevent malaria in colonial Ghana.<sup>75</sup>

## Public Health in Post-Colonial Ghana

The post-colonial era saw a continuation of the colonial public health policies. The health branch was equipped to perform its core functions. Vaccinations were also intensified to prevent diseases like whooping cough, tuberculosis, measles, tetanus, yellow fever and hepatitis B. These vaccinations were usually given to children. The health service after independence has undergone several changes; these changes were mostly influenced by political developments after independence. Several regimes after independence implemented different policies. At independence, Ghana inherited the colonial health infrastructure with a public health approach that focused on major outbreaks of epidemic diseases such as smallpox and yellow fever.<sup>76</sup> From the presidency of Nkrumah to contemporary times,

<sup>69</sup> PRAAD, Kumasi, ARG/1/14/3/1, Sanitary Bye-Laws under Native Jurisdiction Ordinance, No. 5 of 1883.

<sup>70</sup> Ibid.

<sup>71</sup> Ibid.

<sup>72</sup> PRAAD, Kumasi, ARG/1/14/23, Colonial Secretary's Office, Circular No.54/42, November 1942.

<sup>73</sup> Ibid.

<sup>74</sup> PRAAD, KUMASI, ARG/1/14/23, Medical Department Preliminary Notice, Quinine Distribution Scheme, May 1953.

<sup>75</sup> Ibid.

<sup>76</sup> Addae S. History of Western Medicine in Ghana, 1880–1960. (Durham: Durham Academic Press; 1996), 30.

change of government has had a great impact on the health system in Ghana. The socialist state of Nkrumah brought about the free health care system where the state was responsible for the general healthcare needs of the citizens.

Busia's regime brought about the payment of user fees but was minimal. This was to ensure that the health system was sustained.<sup>77</sup> Due to economic crises and the structural adjustment programme, the Rawlings led administration introduced the cash and carry system where the citizens were to bear all health care cost and one had to pay before service. In 1977, the Ghana Health Assessment Project ranked measles second to malaria in terms of the burden of disease.<sup>78</sup> Agyei-Mensah and Aikins have argued that the measles vaccine was introduced to selected districts in Ghana as part of the Expanded Program on Immunization in 1978. After a major epidemic involving 64,557 reported cases in 1985, a mass measles vaccination campaign was organized targeting children below the age of five.<sup>79</sup>

The expanded programme on immunisation launched in 1978 was responsible for immunisation in Ghana. This department is within the disease control department of the public health division. The programme initially had six antigens; Bacille Calmette-Guerin vaccine (BCG), measles, diphtheria-pertussis-tetanus (DPT) and oral polio for children less than one year of age together with tetanus toxoid (TT) vaccination for pregnant women.<sup>80</sup> In 1992 the yellow fever vaccination was added to the vaccination programme.<sup>81</sup> A polio eradication initiative was also introduced in 1996.<sup>82</sup> January 2002 saw the introduction of two new vaccines; the Hepatitis B and the Haemophilus influenza type b (also known as Hib) by the Government of Ghana in partnership with the Global Alliance for Vaccine and Immunization (GAVI) initiative and supported by other health development partners such as WHO, World Bank.<sup>83</sup>

<sup>77</sup> Edward Brenya and Samuel Adu-Gyamfi, "Interest Groups, Issue Definition and the Politics of Healthcare in Ghana" *Public Policy and Administration Research*, Vol. 4, No.6. (2014), 88. <http://www.iiste.org/Journals/index.php/PPAR/article/view/13673/13989>

<sup>78</sup> Bosu WK. Ghana's National NCD Programme: History, Prospects and Challenges. Paper Presented at the 1st Annual Workshop, UK–Africa Academic Partnership on Chronic Disease, Noguchi Memorial Institute for Medical Research, Accra. 12th April 2007.

<sup>79</sup> Agyei-Mensah, Samuel, and Ama de-Graft Aikins. "Epidemiological Transition and the Double Burden of Disease in Accra, Ghana.", *Journal of Urban Health*, Vol.87, No. 5 (2010), 887. DOI: [10.1007/s11524-010-9492-y](https://doi.org/10.1007/s11524-010-9492-y)

<sup>80</sup> Ministry Of Health/Ghana Health Service Immunization Programme Comprehensive Multi-Year Plan (2010-2014 [http://www.nationalplanningcycles.org/sites/default/files/country\\_docs/Ghana/revised\\_cmyip\\_2010\\_-\\_2014.pdf](http://www.nationalplanningcycles.org/sites/default/files/country_docs/Ghana/revised_cmyip_2010_-_2014.pdf)

<sup>81</sup> Ibid., 14.

<sup>82</sup> Ibid.

<sup>83</sup> Ibid., 15.

Below is a table that describes the vaccinations that were given to children. From birth to about nine months, various vaccines are given to children to prevent diseases.

Age	Vaccine	Remarks
BIRTH	BCG Polio O	0.05ml intradermally, 2 drops orally
6 weeks	Five in One 1 Polio 1: Also known as pentavalent	0.5ml IM 2 drops orally
10 weeks	Five in One 2 Polio 2	0.5ml IM 2 drops orally
14 weeks	Five in One 3 Polio 3	0.5ml IM 2 drops orally
9 months	Measles	0.5 ml deep SC or IM
9 months	Yellow Fever	0.5 ml IM

Figure 1. Vaccination for Children. Source: Ministry of Health, Ghana<sup>84</sup>

In 2012, the ministry of health introduced two new vaccines. The introduction of these vaccines also ties into the achievement of the Millennium Development Goal (MDGs) 4, which aims at reducing child mortality by two-thirds by 2015. The vaccines were pneumococcal and rotavirus vaccines. These two vaccines protect children from pneumonia and diarrhoea respectively. The introduction of these vaccines was also in line with World Health Organisation (WHO) standards.<sup>85</sup>

The public health department under the Ghana Health Service was created and mandated to ensure the development of comprehensive public health policies, sustainable strategic plans, programmes and budgets to cover all activities of the service at all levels, undertake periodic review of the activities of the Ghana Health Service and that of its programme implementation partners in the area of public health, and to cater for the design and application of support, monitoring and evaluation systems for purposes of assessing and

<sup>84</sup> Ministry of Health, 2004, <http://www.moh-ghana.org>

<sup>85</sup> Ministry of Health, 2012, <http://www.moh-ghana.org/>.



improving the operational effectiveness of the Ghana Health Service's public health interventions and disease control.<sup>86</sup>

The provision of maternal, adolescent, child and reproductive health and nutrition services through the development of collaborative strategies with other service providers is also a core function of the public health department under the Ghana Health Service. The Disease Control Department and Disease Surveillance Department are departments under the public health department. The public health department has regional and district branches. They are mostly under hospitals or found in various health centres or under the districts or municipal assemblies. Public health officials are also posted to rural areas to ensure public health measures are implemented.<sup>87</sup> Historically, various public health measures and policies were put in place to ensure the prevention of both communicable and non-communicable diseases. The public health department in contemporary Ghana has trained public health officials and special public health nurses who have the duty to put in place preventive healthcare measures for a healthy nation.<sup>88</sup> These public health officials still visit homes and market places to ensure clean environments. Public health education on media platforms is also a measure used by the public health department to reach out to the populace to educate them on preventive healthcare methods.

The Environmental Protection Agency also has a mandate to ensure public health. "The Environmental Protection Agency (EPA) was formally established on 30th December 1994 (Act 490) and given the responsibility of regulating the environment and ensuring the implementation of Government policies on the environment".<sup>89</sup> The agency is under the ministry of environment, science and technology. It performs various functions which in the long run ensure public health. The core functions of this agency also make sure that diseases are prevented. They make sure industrial waste is properly disposed; they monitor the generation, treatment, storage, transportation and disposal of industrial waste. They also have the duty to control water bodies and the general environment from pollution. The Environmental Protection Agency has put measures in place to prevent air, water and general environmental pollution and in the pursuance of this duty ensures public health. It prescribes punishment and fines for people who fail to abide by the environmental protection laws. These punishments are mostly implemented by the district and municipal assemblies.<sup>90</sup>

Environmental related diseases including malaria continued to be a burden on Ghana throughout the twentieth century. Malaria remained the number one cause of morbidity accounting for 40-60% of outpatient visits. It was also the leading cause of mortality in children under five years, a significant cause of adult morbidity, and the leading cause of workdays lost due to illness.<sup>91</sup> Also, by 1984, Ghana recorded 1,015 cholera cases, a decrease of about 13,000 recorded cases on the previous year.<sup>92</sup> It is significant to stress that these

<sup>86</sup> Ghana Health Service, Public Health Division, <http://www.ghanahealthservice.org/division>.

<sup>87</sup> Ibid.

<sup>88</sup> Ibid

<sup>89</sup> Environmental Protection Agency, <http://www.epa.gov.gh/web/>.

<sup>90</sup> Ibid.

<sup>91</sup> Felix Ankomah Asante, Kwadwo Asenso Okyere, Economic Burden of Malaria in Ghana [http://www.who.int/countries/gha/publications/Economic\\_Burden\\_of\\_Malaria\\_in\\_Ghana\\_Final\\_Report\\_Nov03.pdf](http://www.who.int/countries/gha/publications/Economic_Burden_of_Malaria_in_Ghana_Final_Report_Nov03.pdf).

<sup>92</sup> WHO Report on Global Surveillance of Epidemic-prone Infectious Diseases, <http://www.who.int/csr/resources/publications/surveillance/en/cholera.pdf>

environment-related issues and public health issues in particular, have persisted into the twenty-first century.

## Contemporary Public Health Issues

With the increase in population, there have been inadequate public health facilities and inadequate cooperation from the population, combined with inadequate human resource and technological advancements in public health leading to serious public health issues which impede socio-economic development in the country. Actions of individuals and organisations have led to environmental pollution and have hindered advancement in the public health sector.

### Improper Waste Management

One of the major ways to ensure public health is to maintain good sanitation. Environmental cleanliness is essential for healthy living and the prevention of diseases. However, the situation in the twenty first century Ghana is appalling; waste is improperly disposed or managed, dustbins overflow, dumpsites are stretching beyond their boundaries and waste is sometimes disposed of in water bodies or drainages. All these practices serve as public health threats. The pictures below depict the situation in twenty first century Ghana, where almost thirteen thousand tons of waste is generated daily but is improperly managed.<sup>93</sup> The burning of hazardous substances in the open environment and the fumes from rickety vehicles pollute the environment and serve as very serious public health risk.



Figure 2: Disposal of Waste At a landfill site in Accra<sup>94</sup>

<sup>93</sup>Solid Waste Management, <http://africanreality.over-blog.net/article-solid-waste-managment-in-ghana-a-comprehensive-case-for-west-africa-107960790.html>

<sup>94</sup><http://www.ghananewsagency.org/social/closure-of-landfill-sites-leads-to-uncollected-garbage-coleman-74427>



Figure 3: *Improper Management of Waste at Agbogbloshie scrap yard in Accra*<sup>95</sup>

### Improper Settlement Planning

The settlement planning in most towns and cities in Ghana is poor. Building layouts and planning regulations are not adhered to. This has led to slums in most towns and cities which serve as hubs for the spread of diseases. These settlements are overcrowded and do not maintain good sanitary conditions and therefore are prone to the outbreak and the fast spread of diseases. This improper sanitary condition does not ensure the prevention of diseases. The pictures below show slums in Ghana and how they are poorly planned.



Figures 4 and 5: *Improper Settlement Planning at Old Fadama, a suburb in Accra*.<sup>96</sup>

<sup>95</sup> <http://www.aljazeera.com/indepth/features/2013/10/inside-ghana-electronic-wasteland-2013103012852580288.html>



### Inadequate Public Health Facilities and Education

Facilities to ensure public health are inadequate in twenty first century Ghana, with public toilets, baths and urinals in particular being substandard. The increase in population has led to the overuse and deterioration of most public health facilities.<sup>97</sup> This situation has led to long queues at public toilets and open urination and defecation. Bushes and beaches are now used as places of convenience. These acts are threats to the prevention of diseases and have led to the spread of diseases such as cholera, serving as a major developmental problem in twenty first century Ghana.<sup>98</sup> Education campaigns to prevent diseases are organised infrequently. Slums and people living in disease prone areas are not adequately educated on issues of waste management and personal or environmental hygiene to prevent diseases. Ignorance or lack of requisite information on the prevention of diseases in these areas has led to the spread of such diseases. Public health laws are also not strictly enforced giving room for the breaching of these laws. Laws to ensure public health are lax in twenty first century Ghana and this has been a major public health issue.

### Lesson-Drawing for Twenty-First Century Ghana

The approach in Richard Rose's "What is Lesson-Drawing" was the basic approach used to draw lessons from the colonial public health system. According to Rose, a lesson is defined as "an action-oriented conclusion about a programme or programmes in operation elsewhere; the setting can be another city, another state, another nation or an organization's own past". Thus, lessons are the conclusions that can be drawn from the success of a programme from a former or previous experience.

"Lesson-drawing addresses the question: under what circumstances and to what extent can a programme that is effective in one place transfer to another?"<sup>99</sup> Drawing inferences from the previous sections, especially the aspects that focus on pre-colonial and post-colonial general medical systems, it can be inferred that public health in the colonial era was very effective and the public health system in twenty-first century has lots of lessons to draw from this period. Rose also opines that time and space is to be considered before lessons are drawn thus the purpose of lesson-drawing is that it uses knowledge or experience from other times and places to improve current programmes.<sup>100</sup> In view of this, public health strategies during the colonial period (time) could be considered as important to offer better lesson-drawing for twenty-first century Ghana.

The twenty-first century public health system is faced with many problems. The inadequacy of effective public health institutions is a major setback in the public health system. The establishment of the public health branch in 1909 as the first major public health institution, the establishment of various public health boards such as the Kumasi and Sunyani public health boards, the establishment of the Medical Research Institute or the Laboratory Branch, the waste management departments in cities like Tema, Accra, Kumasi, Sekondi-Takoradi and other major public health institutions were very effective in the colonial era.<sup>101</sup>

<sup>96</sup> <http://migratingoutofpoverty.dfid.gov.uk/files/file.php?name=wp-13---awumbila-owusu-teye-2014-can-rural-urban-migration-into-slums-reduce-poverty-final.pdf&site=354>

<sup>97</sup> Jennifer L. Pehr, "Health Care and Infrastructure in Accra, Ghana", *Advanced Issues in Urban Planning*, April, (2010),16, <http://mci.ei.columbia.edu/files/2013/03/Health-Care-and-Infrastructure-in-Accra-Ghana.pdf>

<sup>98</sup> Ibid., 4.

<sup>99</sup> Richard Rose, "What Is Lesson-Drawing?", *Journal of Public Policy*, Cambridge University Press, Vol.11 (1991), 3, <https://doi.org/10.1017/S0143814X00004906>

<sup>100</sup> Ibid., 4,

<sup>101</sup> Stephen Addae, "History of Western Medicine in Ghana 1880-1960".Durham Academic Press, 1996. 86-87

The Medical Research Institute had the responsibility for researching epidemics and producing vaccines and other preventive health methods. The public health boards were established to put into practice the functions of the health branch in various towns. Due to the burden on the health branch concerning the management of waste, the waste management department was established to help manage waste in the colony effectively.<sup>102</sup>

Due to the recent increase in population and the negative attitude of the indigenes toward them in the twenty-first century, the public facilities are worn out and destroyed. Rubbish dumps and sites for the disposal of waste are improperly kept. Animals are slaughtered at unapproved and unhygienic places. There is pressure on the use of public toilets and a sizeable number of the population, especially those living in rural areas, do not have access to potable drinking water. All of these issues are public health threats that could be prevented with a determination to outdo the colonial past. According to Boye, the enactment of the Mosquito Ordinance, Cap 75, in 1891 was the beginning of the recognition of environmental sanitation services in the country.<sup>103</sup> The Mosquito Ordinance law aimed to empower the environmental health department to destroy mosquito larvae, Cap 78 was concerned with infectious diseases and how to prevent them while Cap 86 aimed to take care of the general sanitation problems.<sup>104</sup> People who disobeyed these laws were punished or fined.<sup>105</sup> A particular feature of these laws was that not only the colonial administration was responsible for the enforcement of these laws but the local administration, including chiefs and the sanitary inspectors, were responsible for the implementation. Public health laws must be adequately implemented with the help of local chiefs and the population as a whole. These laws must be strictly enforced not only to prevent diseases but to ensure sustainable development. The law courts also should be used to punish offenders or law breakers to serve as deterrence.

Vaccinations, mepacrine and quinine became the preventive healthcare strategy in colonial Ghana.<sup>106</sup> This method was effective and was a major reason for the reduction in morbidity of Europeans in the colony. In twenty-first century Ghana there is the use of mosquito nets and other repellents to prevent malaria. The use of mosquito nets and vaccinations should be intensified especially in the rural areas with high levels of rainfall and infections as exemplified in the Global Fund against AIDS, TB and Malaria. Good urban or settlement planning can also be a good measure to prevent diseases in modern day Ghana. In the colonial era, chiefs and headmen had to ensure all buildings have permits. The public health regime at this time led to good planning which prevented overcrowding and the quick spread of diseases. The settlement planning in the twenty-first century should ensure that schools, filling stations, markets, health facilities and other infrastructure are allocated to the appropriate settlement.

Conclusively, the colonial era had lots of public health measures which were effective. As envisaged, a public health official confronted with an epidemic will search for ideas in medical journals and scientific meetings as well as in agency meetings and bureaucratic documents. This research has put together materials from journals, archives and

<sup>102</sup> Ibid.86-87

<sup>103</sup> Boye Bandie, "Assessment of the Environmental Health, Sanitation and Hygiene Strategies and Practices", *Final Report on District Capacity Building Project, Bolgatanga*, March 2003.13-14

<sup>104</sup> Ibid.

<sup>105</sup> PRAAD, Kumasi, ARG/1/14/3/1, Rules with Respect to the Regulation of Towns and Villages under Section Twenty Seven of the Ashanti Administration Ordinance 1902.

<sup>106</sup> PRAAD, Kumasi, ARG/1/14/23, Colonial Secretary's Office, Circular No.54/42, November 1942.

books to provide basic lessons from colonial public health system to help solve public health issues in twenty-first century Ghana.

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